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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/533,678	03/23/2000	Masami Hatori	Q56799	1082

7590 01/28/2004

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EXAMINER

NGUYEN, TUAN N

ART UNIT	PAPER NUMBER
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2828

DATE MAILED: 01/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary****Application No.**

09/533,678

**Applicant(s)**

HATORI, MASAMI

**Examiner**

Tuan N Nguyen

**Art Unit**

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 31 October 2003.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 and 3-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. §§ 119 and 120**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 10/31/2003                      6) ☐ Other: \_\_\_\_\_

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## **DETAILED ACTION**

### ***Response to Amendment***

1. In respond to applicant's amendment filed 10/31/2003, claims 1, 12 have been amended, claim 2 has been canceled, and claims 20,21 have been added. Claims 1, and 3-21 are pending.
2. Applicant's arguments with respect to claims 1,3-21 have been considered but are moot in view of new ground(s) of rejection.

### ***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 12 are reciting a TE mode optical waveguide, which is vague and indefinite when using abbreviation in the claim. It is not clear the dependency of claims 3-6, 16-17, because the claim 2 has been deleted. Claims 3-11, and 13-21 are rejected based on the same reason.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are

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such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1,3-21 are rejected under 35 U.S.C. 103(a) as being anticipated by Kitaoka et al (US patent 6,327,289) in view of Sonoda et al. (US 5838486).

With respect to claims 1, and 12 Kitaoka et al. '289 shows in figures 11, 12, 15-19, 22, 23 and disclose an optical wavelength conversion element (11) which is formed such that on a ferroelectric crystal substrate (125), a TE optical waveguide which extends along a substrate surface and in which a polarization direction parallel to the ferroelectric substrate, and a domain inversion portion (127), where a spontaneous polarization direction of the substrate is inverted, is periodically formed in the optical waveguide, and the optical wavelength conversion element (11) converts a wavelength of a fundamental wave which propagates in the optical waveguide in a direction along which the domain inversion portion (127) are aligned; and a semiconductor laser (1) which can emit a laser beam in the TE mode in which a polarization direction is parallel to the substrate and which can adjust a center wavelength of stimulated emission of the laser beam, and light emitted from the semiconductor laser is made to enter the optical waveguide; where said optical wavelength conversion element and said semiconductor laser are mounted such that the polarization directions of the TE mode coincide with each other and a light exit portion of the semiconductor laser and a light entrance portion of the optical wavelength conversion element (11) coincide with each other, note col. 1 line 24 to col. 11 line 5, see fig. 4. The claim further requires that the spontaneous polarization direction form a predetermined angle with respect to substrate in a plane perpendicular to a propagation direction of the fundamental wave. Sonoda et al. '486 2,7, 15, 16 shows and discloses in the abstract an

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optical wavelength conversion element formed on a ferroelectric crystal substrate having nonlinear optical effect and domain reversal that form a predetermined angle with respect to substrate. It is within one skill in the art to provide the optical wavelength conversion element as taught by Sonoda '486 to perform optical wavelength conversion, for the benefit of having the polarization form in a predetermined angle.

With respect to claims 3-6, Kitaoka et al discloses the spontaneous polarization direction of said substrate forms a predetermine angle with respect to the substrate surface in a plane perpendicular to a propagation direction of the fundamental wave, note col. 3.

With respect to claim 7-11 Kitaoka et al discloses semiconductor (110) makes the center wavelength of stimulated emission of the laser beam coincide with a phase matching wavelength of the optical wavelength conversion element (116), note col. 2 line 13 to col. 8 line 24, see fig. 1. Kitaoka et al show in figure (4 A,B) a semiconductor laser (1), a ferroelectric crystal substrate (125) an optical wavelength conversion element (11), an SiO<sub>2</sub> thin film (16), note cols. 9-10.

With respect to claims 13-15, figure 22 show mounting the optical wavelength conversion element (504) to said flat surface of said substrate (501), the semiconductor laser (502) mounting to the stepped surface, note col. 26 line 64 to col. 29 line 26. Figure 15 shows a proton exchange optical waveguide (209), an optical waveguide element (204), a semiconductor laser chip (203) are fixing in the substrate (201), note col. 21.

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With respect to claims 16-18, 20, 21 Sonoda et al. or Kitaoka et al. discloses the predetermined angle of the domain inversion region, note col. 3. It has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art.

With respect to claim 19, figure 3 show the upper electrode (15a) and lower electrode (15b).

### **CONCLUSION**

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP 706.07. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

### ***Communication Information***

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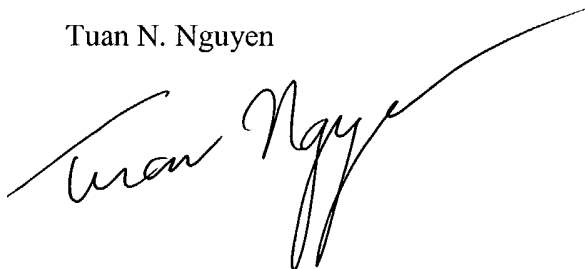

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan N Nguyen whose telephone number is (571) 272-1948. The examiner can normally be reached on M-F: 7:30 - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (571) 272-1941. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.

Tuan N. Nguyen

A handwritten signature in black ink, appearing to read 'Tuan Nguyen', with a long, sweeping horizontal stroke extending to the right.

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